

REMARKS

After entry of this Amendment, claims 1-8 are pending in the application. Claims 1 and 8 have been amended to more particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Reconsideration of the Application is respectfully requested in view of the amendments defined herein and the following remarks.

In the Office Action dated November 3, 2005, the Examiner has rejected claims 1-8 under 35 U.S.C. §103(a) as being unpatentable over either Johnson et al U.S. Patent No. 5,760,299 or Johnson et al U.S. Patent No. 5,531,959 in view of van der Maas U.S. Patent Publication No. 2002/0157453. The Examiner recognizes that the structures in Johnson '299 and '959 do not specifically disclose cleaning the syringe, but suggests that it would have been obvious to one of ordinary skill in the art to include in Johnson '299 and '959 the step of cleaning the syringe as taught by van der Maas.

The present application discloses an apparatus and method for automated liquid phase microextraction. The process includes the step of drawing a carrier solvent into the syringe before collecting the sample in the syringe. See claims 1 and 8. A small volume of solvent is drawn into the syringe for each sample sequence. See ¶[0065] and Fig. 6. As shown in Figs. 1 and 3-8, the syringe 24 can be positioned over a sample vial 34 located in the holder 32 and then lowered to extract a sample from the vial 34. The syringe 24 can then be raised and moved along the frame 16 to a position above one of the injectors 36, 38. The syringe 24 can be lowered to cause the syringe to inject the sample into the injector 36 or 38 for analysis by the chromatographic instrument. The step of collecting the sample in the syringe can include the steps of activating a syringe plunger to expel and hold a microdrop of the solvent on the tip of the syringe; holding the microdrop on the tip of the syringe in the sample vial for a period of time to collect the sample; and drawing the microdrop and the collected portion of the sample into the syringe. See claim 2.

The structures disclosed in Johnson '299 and '959 disclose a fluid flow system for automatically monitoring and optimizing fluid flow throughout a chromatographic process, in particular for solid phase extraction procedures. A probe 36 is mounted on an x-y-z translator 38 for movement in all three directions. The probe 36 is moved to a parking station 46, where the probe 37 engages with a seal head 80. See '299 col. 9, ll. 1-5. The seal head 80 provides a means for the probe 36 to connect to the column 28. A sample 152 is

received in the interior of the column 28, between an open end 170, shown in Fig. 2 coupled to the seal head 80, and an internal barrier 150. See '299 col. 5, ll. 36-38. A pressure source is coupled to the probe 36 which connects to the seal head 80 and the upper open end 170 of the column 28. See col. 7, ll. 20-25. The probe 36 can include a lumen 58 which provides a liquid pressure via one of the syringes 44 to the column 28. See '299 Figs. 1 and 2 and col. 6, ll. 37-44. The sample 152 is extracted from the column 28 through the barrier 150 to a detector 160 by an applied pressure force. See Fig. 2 and col. 6, l. 67-col. 7, l. 3. Although the probe 36 is controlled in multiple axes, the processes disclosed in Johnson '299 and '959 do not include drawing a carrier solvent into the probe, inserting the tip of the probe into a sample vial and collecting a portion of the sample in the probe. Instead the probe is moved for engagement with a seal head 80 and then moved to second position for coupling of the seal head 80 with the column 28. The column 28 holds the sample material, not the probe. The liquid distributed to the probe 36 by the syringe 44 is used as a pressure force for extracting the sample material from the column 28. Thus, the Johnson '299 and '959 references are devoid of any teaching or suggestion of a method of automatically performing liquid microextraction that includes drawing a carrier solvent into the syringe, inserting the tip of the probe into a sample vial and collecting a portion of the sample in a syringe as set forth by the Applicant in claim 1, from which claims 2-7 depend, and claim 8. Additionally, the Johnson '299 and '959 references are devoid of teaching or suggesting the step of collecting the sample by activating a syringe plunger to expel and hold a microdrop of the solvent on the tip of the syringe, holding the microdrop on the tip of the syringe in the sample vial for a period of time to collect the sample, and drawing the microdrop and the collected portion of the sample into the syringe as set forth by the Applicant in claim 2.

The structure disclosed in van der Maas is relevant only for its disclosure of cleaning an injecting needle after the needle is used to transfer a sample from a vial to an injector. It is respectfully submitted that one of ordinary skill in the art would not be led by van der Maas to clean the column 28 disclosed in Johnson '299 and '959 between collection of the samples. The Johnson '299 and '959 references disclose a probe 36 coupled to a column 28 holding a sample where the probe 36 can be disengaged from the column 28 and can be re-engaged with a different column between samples, obviating the need for cleansing the column between collection of the samples. Additionally it is re-submitted that the

methods disclosed in Johnson '299 and '959 are devoid of the step of drawing a carrier solvent into the syringe for collection of a sample in the syringe as set forth in claims 1-8. Reconsideration of the rejection is respectfully requested.

For the reasons set forth above, it is respectfully submitted that Johnson '299 and '959 and van der Maas, taken singly or in combination are devoid of an invention as defined in claims 1-8. Reconsideration of the rejection is respectfully requested.

It is respectfully submitted that the Amendment traverses and overcomes all of the Examiner's objections and rejections to the application as originally filed. It is further submitted that this Amendment has antecedent basis in the application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the application. Reconsideration of the application as amended is respectfully requested. It is respectfully submitted that this Amendment places the application in suitable condition for allowance; notice of is requested.

If the Examiner feels that prosecution of the present application can be

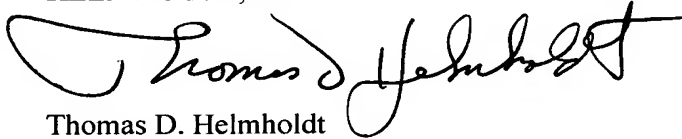
Date February 3, 2006

Reply to Office Action dated November 3, 2005

expedited by way of an Examiner's amendment, the Examiner is invited to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,

YOUNG, BASILE, HANLON, MacFARLANE, WOOD &
HELMHOLDT, P.C.

A handwritten signature in black ink, appearing to read "Thomas D. Helmholdt", written in a cursive style.

Thomas D. Helmholdt
Attorney for Applicant(s)
Registration No. 33,181
(248) 649-3333

3001 West Big Beaver Rd., Suite 624
Troy, Michigan 48084-3107

Dated: February 3, 2006
WMH/TMS/jml